

REMARKS

Reconsideration of this application in view of the above amendments and following remarks is requested. After entry of this amendment, claims 1-21, 23-33, 35-42 and 44-54 are pending in the application. In this amendment, claims 1-4, 14, 15, 18-21, 23, 31, 35, 45, 47, 48 and 51 are amended.

In the office action dated March 8, 2005, the examiner: 1) requires corrected drawings for each of Figures 1-10 due to various objections (Figs 1-6 – insufficient quality; Figs 3-6 – numbers and reference characters not plain, legible and at least .32cm in height; and Figs 7-10 – lack reference characters); 2) objects to the specification, requiring that the disclosure refer to previously presented Figs 7-10; 3) rejects claims 1-4, 11, 12, 14-19, 21, 23, 31, 35, 45, 47, 48, 51, 52 and 54 under 35 U.S.C. §103(a) as being unpatentable over the combination of Sheehan (US Patent No. 6,106,466) and Seyed-Bolorforosh (US Patent No. 5,841,889); 4) rejects claim 20 under 35 U.S.C. §103(a) as being unpatentable over the Sheehan/Seyed-Bolorforosh combination, and further in view of Liu (US Patent No. 5,339,815); and 5) rejects claim 53 under 35 U.S.C. §103(a) as being unpatentable over the Sheehan/Seyed-Bolorforosh combination, and further in view of Slayton (US Patent No. 6,050,943). The examiner allows claims 5-10, 13, 24-30, 32, 33, 36-42, 44, 46 and 49-50.

Drawings

In paragraph 3 of the office action, the examiner requires corrected drawings for each of Figures 1-10 due to various objections. Specifically, the examiner characterizes Figures 1-6 as being of insufficient quality; Figures 3-6 as containing numbers and reference characters that are not plain, legible and at least .32cm in height; and Figures 7-10 as lacking reference characters.

Applicant attaches corrected, replacement drawings for each of Figures 1-10, addressing each of the examiner's objections.

Specification

In paragraph 4 of the office action, the examiner objects to the specification, requiring that the disclosure (i.e., detailed description of the invention) refer to previously presented Figures 7-10. The examiner further requires that, after Figures 7-10 are given reference numbers in accordance with the above-identified drawing objections, the specification be amended so that it refers to the drawings.

Applicant includes herein specification amendments satisfying the examiner's above-referenced requirements. Specifically, for consistency specification fluidity, applicant satisfies these requirements by adding paragraphs reiterating the method steps illustrated in each of Figures 7-10. Since these method steps are articulated in Figures 7-10, applicant submits that the specification amendments add no new matter.

Claim Rejections – 35 USC § 103

Applicant respectfully traverses the examiner's rejection of claims 1-4, 11, 12, 14-19, 20, 21, 23, 31, 35, 45, 47, 48, 51, 52, 53 and 54 under 35 U.S.C. §103(a) as being unpatentable over one or more of Sheehan (US Patent No. 6,106,466), Seyed-Bolorforosh (US Patent No. 5,841,889), Liu (US Patent No. 5,339,815) and Slayton (US Patent No. 6,050,943), as applicant denies that a prima facie case of obviousness has been established.

Applicant, however, has amended claims 1-4, 14, 15, 18-21, 23, 31, 35, 45, 47, 48 and 51 to expedite prosecution of the application. The amendments essentially add features that have been previously characterized as allowable. Accordingly, applicant respectfully submits

that independent claims 1, 14, 18, 23, 35, 45, 47 and 48, as amended, and the respective dependent claims, are patentable for at least the following reasons:

Regarding independent claims 1, 45 and 48, the cited art fails to disclose, teach or suggest, either alone or in combination, an image model including a data likelihood enabling a statistical inference to formulate underlying characteristics, where the data likelihood is constructed as a product of density functions characterizing each pixel. To expedite prosecution, applicant has added the recited features to independent claims 1, 45 and 48, as these features were found allowable in at least independent claim 5.

Regarding dependent claim 2, the cited art fails to disclose, teach or suggest, either alone or in combination, that the density function characterizing each pixel in claim 1 is assigned to each pixel based upon a classification of each pixel determined by a ratio of an amplitude mean value and a standard deviation value. This feature was also found allowable in at least independent claim 5.

Regarding independent claim 14, the cited art fails to disclose, teach or suggest, either alone or in combination, a method for forming an image model involving creating a physical model of image formation and creating a random phasor sum representation of the physical model to form the probabilistic model. This feature of the invention was found allowable in at least independent claims 24 and 33.

Independent claims 18 and 47 involve creating a physical model of image formation, and creating a representation of the physical model to form the probabilistic model where the representation is a data likelihood created from a random phasor sum representation of the physical model. Dependent claims 19-21 develop the constructing of the data likelihood, and include features found allowable in at least claim 5.

Regarding independent claims 23 and 35, the cited art fails to disclose, teach or suggest, either alone or in combination, a method for forming a physically-based, probabilistic model for ultrasonic images by creating a representative physical model of image formation and creating a representation of the physical model to form the probabilistic model where a data likelihood is created enabling a statistical inference to formulate underlying characteristics and the data likelihood is constructed as a product of density functions characterizing each pixel. Features of claims 23 and 35 were found allowable in at least claim 5.

For the foregoing reasons, applicant respectfully requests that the examiner withdraw the §103 rejection of claims 1-4, 11, 12, 14-19, 20, 21, 23, 31, 35, 45, 47, 48, 51, 52, 53 and 54.

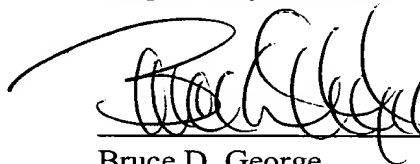
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Office Action Dated: March 8, 2005

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CONCLUSION

In light of the above amendments and remarks, applicant submits that pending claims 1-21, 23-33, 35-42 and 44-54 are allowable, and requests that the examiner issue an early notice of allowance. The examiner is invited to call the undersigned attorney in the event that a telephone interview will advance prosecution of this application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Bruce D. George", is written over a horizontal line.

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Amendments to the Drawings

Attached are ten (10) formal replacement sheets of drawings, which includes proposed revisions to each of Figures 1-10. The ten (10) attached replacement sheets, which include Figures 1-10, respectively, replace the presently presented ten (10) sheets including Figs. 1-10, respectively.

Attached: Ten (10) Formal Replacement Drawing Sheets